

Ahead to the Past!

Next-Gen, Old-Fashioned Venture

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The VC “LANDSCAPE” in 2000

	<u>1980</u>	<u>1990</u>	<u>2000</u>
# of VC Firms in Existence	87	375	693
# of Professionals	1035	3794	8368
# of First Time VC Funds Raised	24	14	164
# of VC Funds Raised This Year	57	82	497
VC Capital Raised This Year (\$B)	2.08	3.20	105.05
Avg VC Fund Size Raised This Year (\$M)	36.5	39.0	211.4

The Illiquid Bulge

From 1995-2000:

	14,463	Companies funded
-	978	Went public
-	1,529	Were acquired
-	1,180	Went out of business
<hr/>		
	10,776	Remaining

Source: Venture Economics; Venture Source

The Beauty of Small Numbers (And Board Seats)

Initial investment:
\$100k to \$1M, board

<u>Date</u>	<u>Company Name</u>
Jul-95	Excite (@home)
Jun-96	Juniper
Apr-97	Cerent (Cisco)
Sep-98	Corio
Oct-98	Siara (Redback)
Apr-99	Asera
Jun-00	Centrata
Jan-01	Infinera

<u>Aggregate Return*</u>	<u>Success Rate*</u>
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< \$1M (n=8)	192.7 x	100%
> \$1M (n=18)	4.5 x	67%

Initial investment:
\$2.5m to \$16M

Apr-95	Concentric (XO)
May-96	Viant
Jul-96	Cybermedia
May-97	Extreme Networks
Apr-98	Silicon Spice (Broadcom)
May-98	Corvis
Jul-98	Lightera (Ciena)
Mar-99	CoSine
Sep-99	BBO
Nov-99	Zaplet
Dec-99	Valiant
Dec-99	Zambeel
Dec-99	OnFiber
Jan-00	Coreon
Mar-00	Kymata (Alcatel)
Aug-00	Cenix
Nov-00	SS8
Jul-01	Kovio

On board (n=16)	70.8 x	88%
Not on board (n=10)	8.0 x	60%

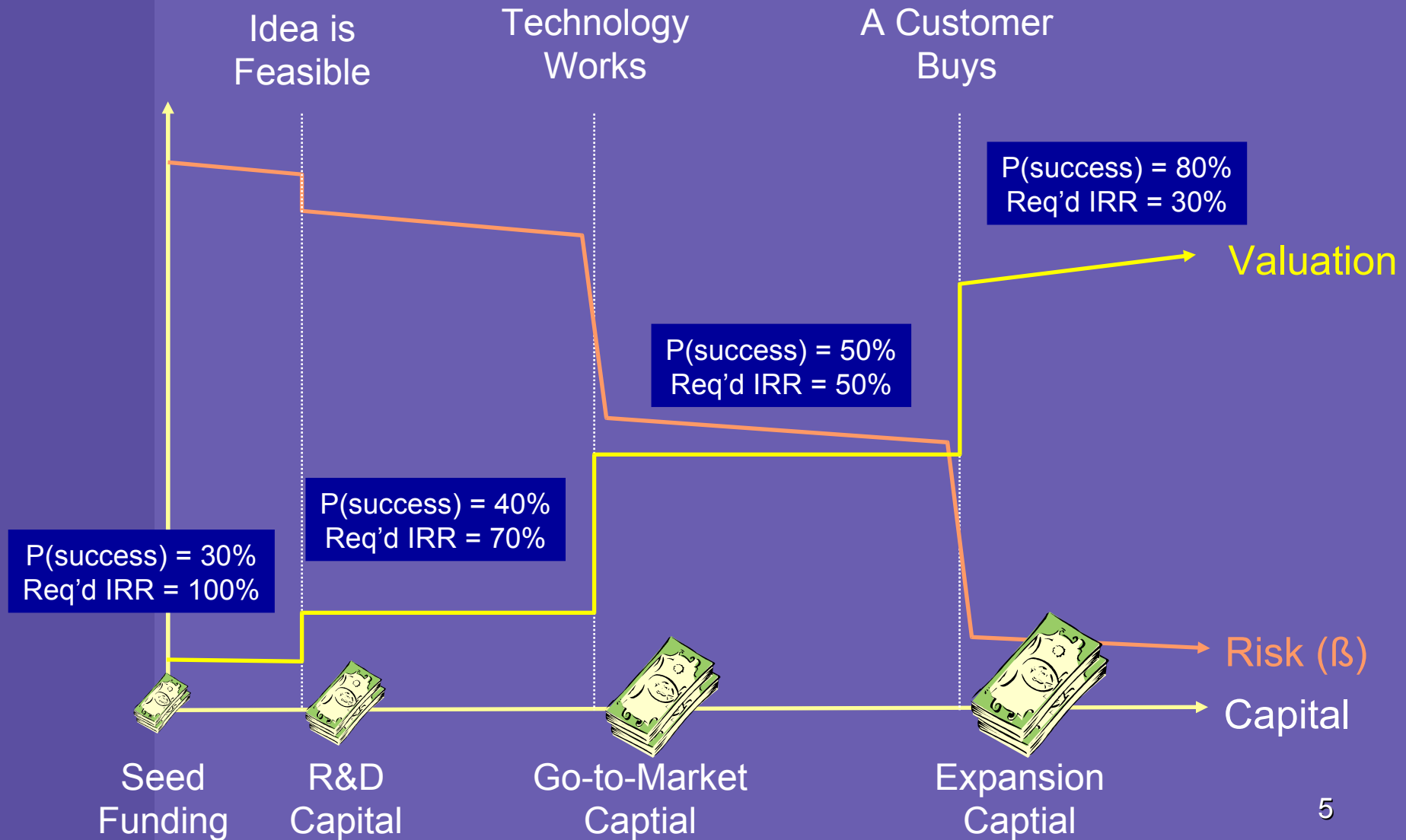
Conclusions

- Attention matters
- Board responsibility = better due diligence
- Quick money makers don't work
- Too many passive deals last few years
- One seed per year works for me

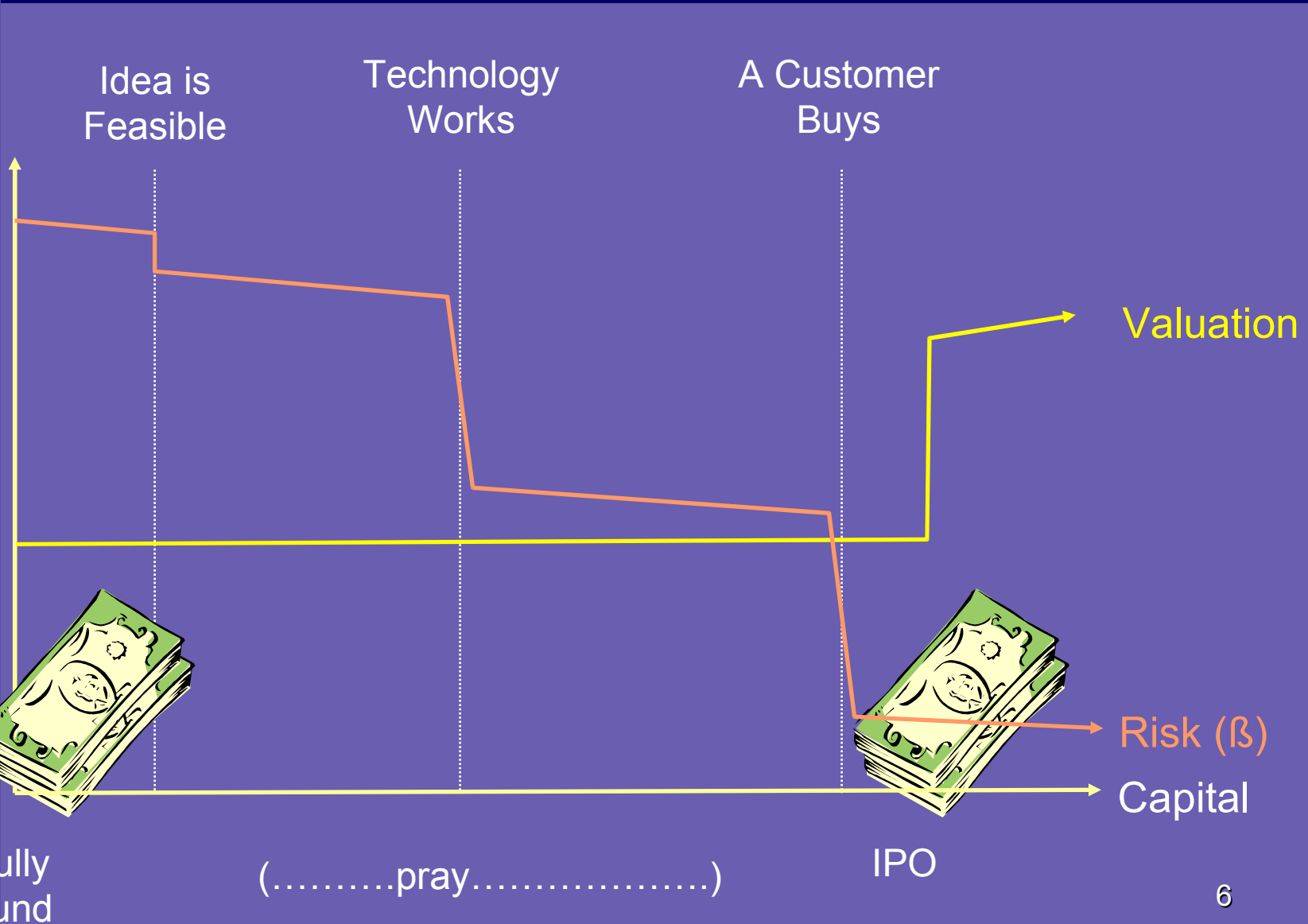
Red = Board Seat

Funding to Milestones

aka “Old-Fashioned Venture Capital”



The “Fully Funded” Folly




A Generic Early 90's Model

	Round Type	Date	Amount Raised (MM)	Pre-Money Valuation (MM)	IRR	Multiple
1	Seed	Jan-90	\$ 0.50	\$ 2	101%	32.53
2	1st	Jan-91	\$ 3.00	\$ 10	70%	8.13
3	2nd	Jan-92	\$ 8.00	\$ 32	50%	3.30
4	3rd	Jan-94	\$ 13.50	\$ 100	32%	1.32
5	IPO	Jan-95		\$ 150		

Total Private Capital \$ 25 Million

A Generic Late 90's Model

	Round Type	Date	Amount Raised (MM)		Pre-Money Valuation (MM)	IRR	Multiple
1	Seed	Jan-97	\$	5	\$ 35	79%	18.37
2	1st	Jan-98	\$	10	\$ 100	65%	7.35
3	2nd	Jan-99	\$	25	\$ 200	59%	4.04
4	3rd	Jan-00	\$	60	\$ 600	52%	1.52
5	IPO	Jan-01			\$ 1000		

 **\$200**

Total Private Capital \$ 100 Million

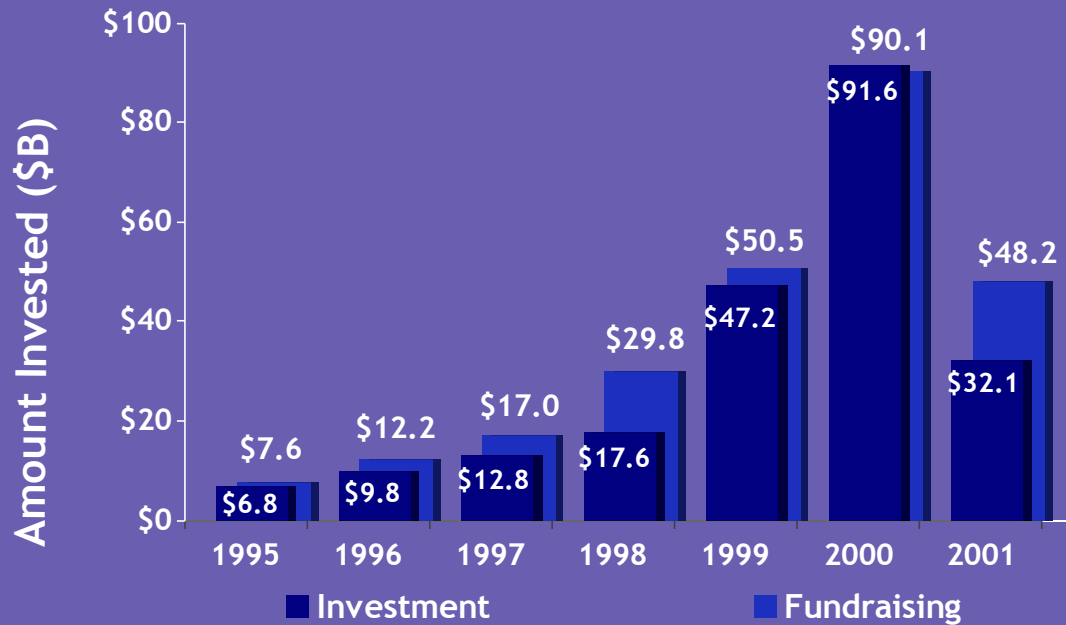
 **?**

Why “Ahead to the Past”?

- We can't make money with Early 90s IPO market and Late 90s Cash Burns
- Some correction already
 - Private Valuations
 - Rent (in Silicon Valley)
- Some corrections yet to occur
 - Salaries
 - Focus
 - Attention
- VC Behavior
 - Funding size?
 - Corrections for the past bubble
 - Entrepreneurial incentives

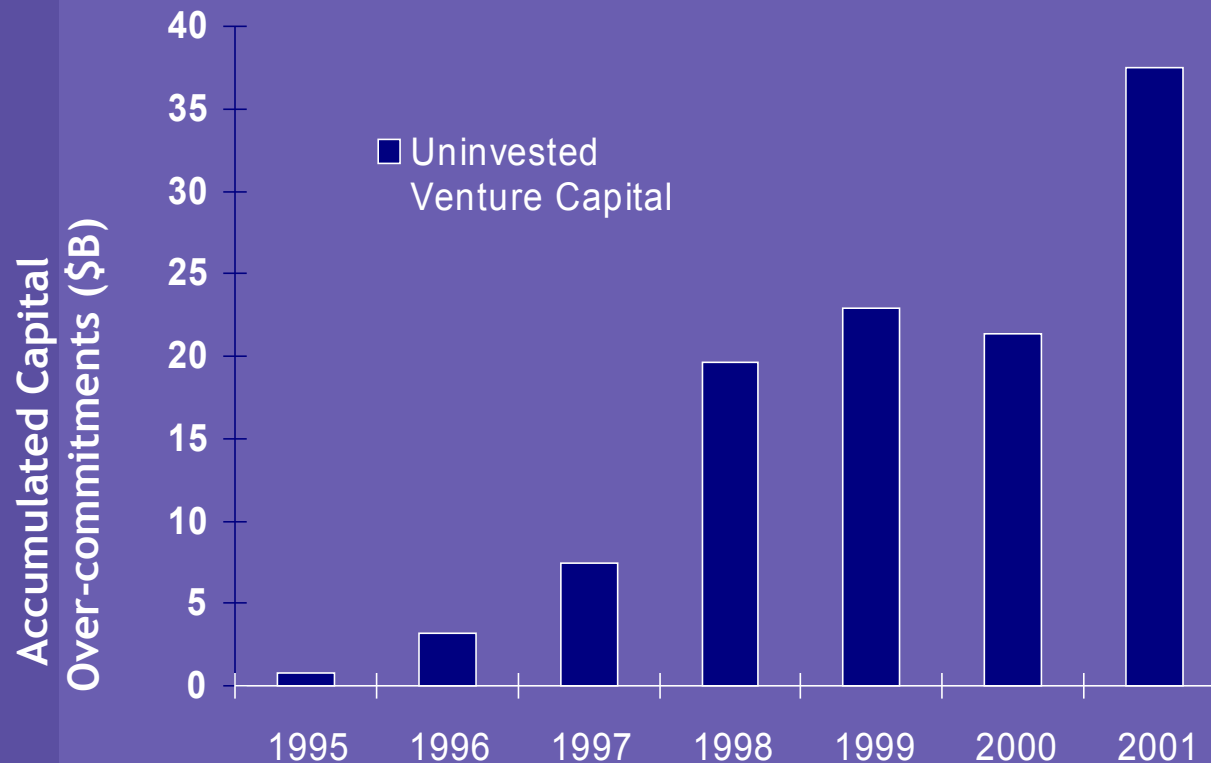
The Committed Capital Bubble

Fundraising vs. Amount Invested



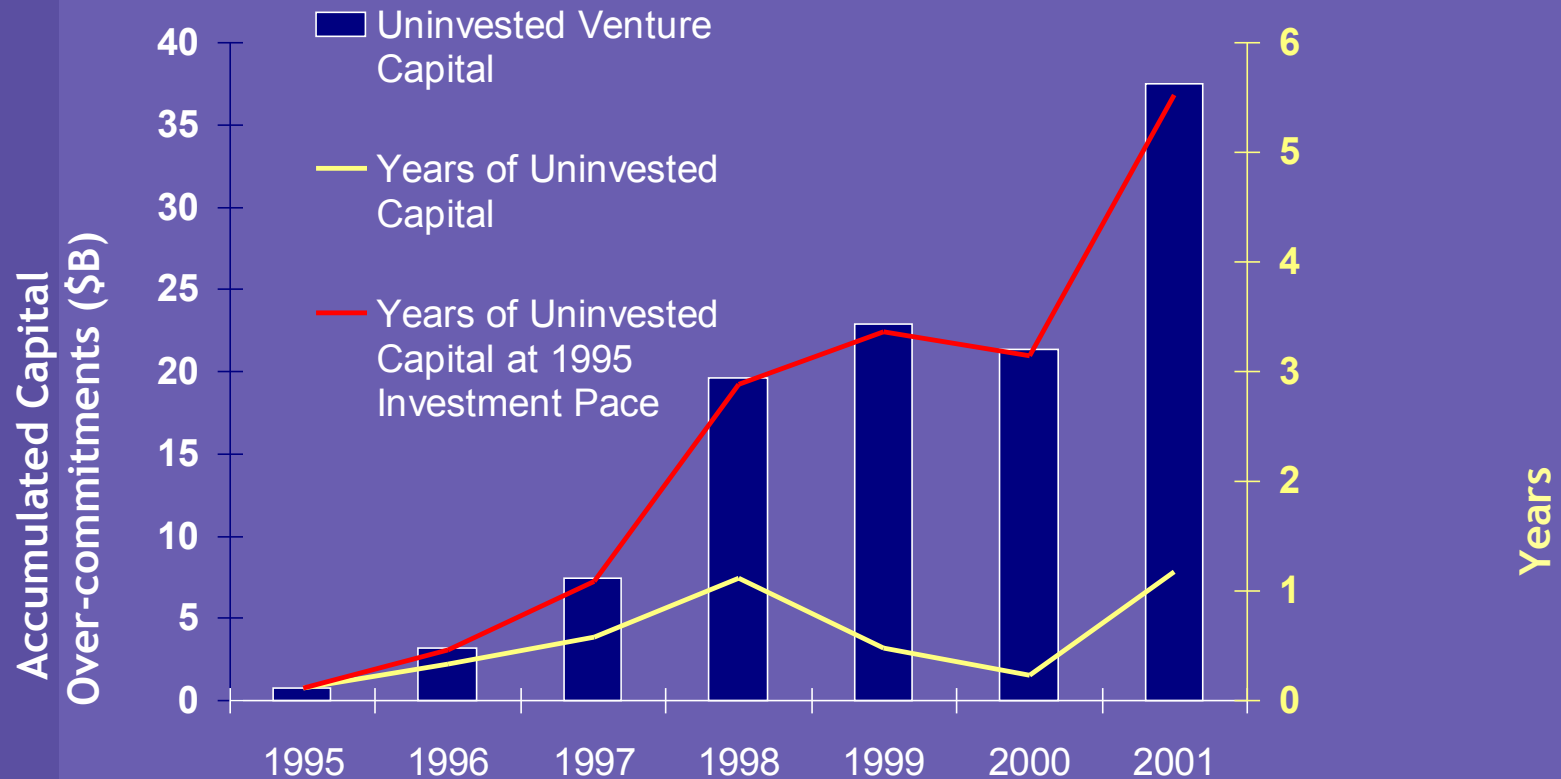
Source: VentureOne

The Committed Capital Bubble



Total Over-committed Capital for all Private Equity = \$100B

The Committed Capital Bubble

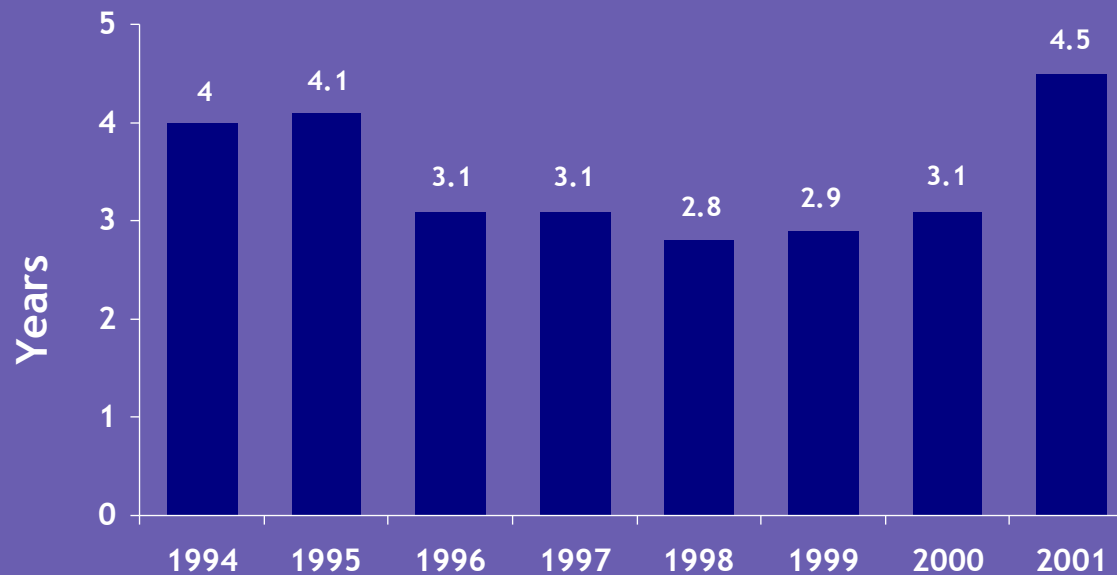


The VC Firm Model

- 1.5-2 ventures/partner/year
- \$8-10M invested per venture (3 rounds)
- New fund every 2 years
- \$12-20M per partner per year
- \$24-40M per partner per fund

2001 IPO Companies Are More Mature

Time From Initial Equity Funding to IPO



Source: VentureOne

What about the Telecom “Blowout”?

	<u>Category</u>	<u>Company</u>	<u>Return IF HELD</u>
On the board	Systems (Electronic)	Juniper	300x
		Siara	14x
	Systems (Optical)	Cerent	228x*
		Corvis	3.6x
		Infinera	Too early
	Services	Concentric	12x*
		OnFiber	Too early
	Software	Coreon	0.3x
NOT on the board	Systems (Electronic)	CoSine	0.9x
		Extreme	14x
		SS8	Too early
	Systems (Optical)	Lightera	12x*
	Services	Valiant	0x
	Components	Kymata	0.7x
		Cenix	Too early
		Silicon Spice	12x*
	Software	IPVerse	0x
		Sigma	Too early

* Valued at time of acquisition

Case Study: OnFiber



- Management team saw a need to cut cash burn in January 2001
- Reduced burn from \$5M plan to \$1-1.5M per month
- Turned down capital from investors pushing “get big fast” strategy
- Got out of obligations early
- Used 50% IRR hurdle on all new projects
- Focused on getting critical mass in 6 metros rather than 26
- OnFiber Team’s Results:
 - Current burn = <\$1m/month
 - \$30M in the bank, no debt
 - Acquiring assets for pennies on the dollar

Bottom-Fishing Rarely Works

Old joke about a restaurant:


**“The food is horrible...
but it’s all-you-can-eat!”**

- Too many “recaps” of uninteresting companies
- “Mercy killing” can be a good thing
- The good news: a handful of high-valuation private companies indicates quality is still being chased.

Dot-Com Profitability: Less is More

- An Empirical Fact: Good financial results out of several consumer-focused internet-based companies
- Positive growth and EBITDA
- Amazon
- Blue Nile
- eHealthInsurance
- Autotrader
- Google

Wrong Goals: Time-to-IPO?



NOVEMBER 09, 2000
PREVIOUS [NEWS ANALYSIS](#)

██████████ Wall Street's Way to San Jose

...

"Most startups now hope to go from formation to IPO in 18 months. We'll do it in 15 months," says ██████████, vice president of business development at ██████████. The company was founded in February this year -- and the plan is to take it public mid-2001, he says.

THE GLOBAL SITE FOR
OPTICAL NETWORKING
www.lightreading.com

RED HERRING

HOME	VENTURE CAPITAL
TECHNOLOGY	
VENTURE CAPITAL	
• The Angler	
INVESTOR	
MAGAZINE	

Vinod Khosla predicts optics shakeout

The Kleiner Perkins partner says that some 90 percent of optical startups will flop. The good news is, he believes the other 10 percent will shine.

By Om Malik
November 3, 2000

No optical systems boards from mid '98 to 2001

Avoid the “Conventions”

- Profits in telecom: Invest early & significantly
- Less can be more - Small is Beautiful
- Attention (and board seats) matter
- Bottom fishing – does it work?
- Mercy-kill the uninteresting companies!
- “HOT” is NOT “good”: Dotcom, Telecom, Nano?
- IPO is NOT a “goal” : building a company is!
- Stock Market is not Validation: Corio
- Need to bleed off the oversupply of capital

How Did We Get Here?

The Past Five Years

- Fundamental Opportunity
- Greed
- Funding the “right-Lay”s
- Irrational Exuberance : IPO “goal”
- Escalating Expectations & Hype: The Khosla Bubble
- Fear
- Dislocated Business Plans
- Flight to Quality, Defensibility, Economic Contributions?

Many Companies Will Not Keep Up

Leading Computer Vendors (Last Generation)

IBM	Sperry
H-P	Univac
Data	Wang
General	Cray
DEC	



Leading Computer Vendors (Current)

IBM
Sun
Dell
Compaq
H-P

Leading Communications Vendors/Carriers

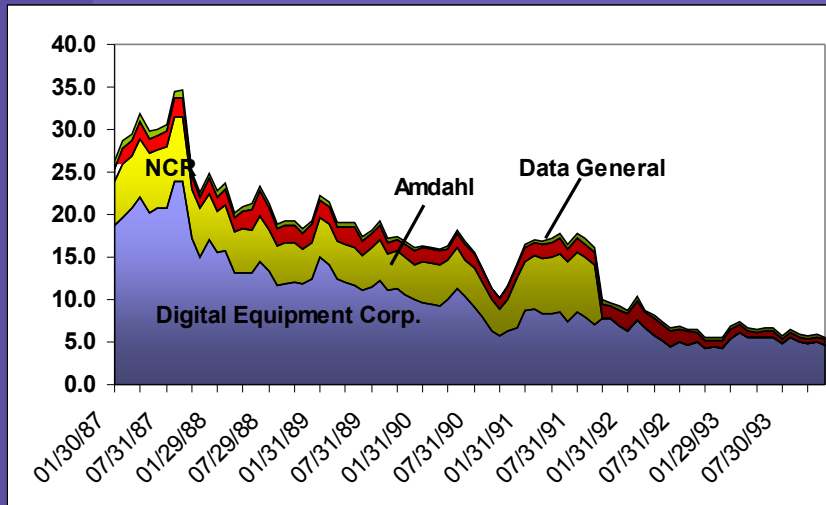
Lucent	Alcatel
Nortel	AT&T
Cisco	Sprint
Tellabs	Worldcom



Leading Communications Vendors/Carriers (Next Generation)



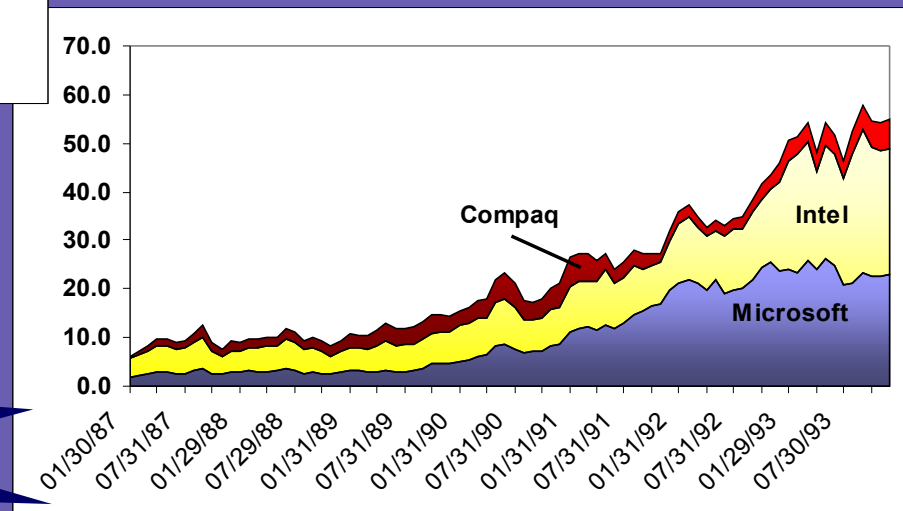
Old vs. New in the Mainframe to PC Transition



Capital fled
legacy systems

New winners emerged

This time the
stakes
are larger!



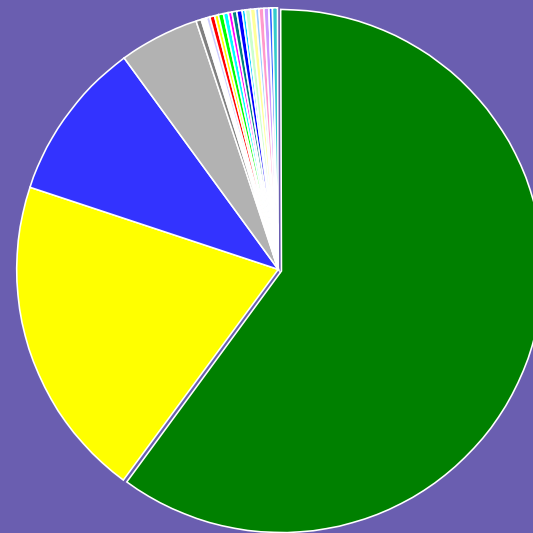
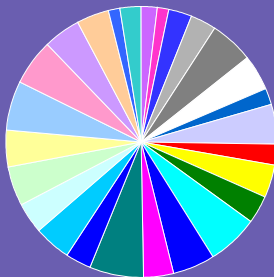
The Investors Dilemma

- Expect more losers than winners
- Many will lose everything
- More will be won than lost
- The value of winners will exceed the cumulative market cap of the entire sector today
- M&A Game is hard to predict

Winners Take (Almost) All

5 years out, the group's market cap has grown...

Industry Structure Today



But leaders far exceed the also-rans

Fundamentals of Demand

- The Enterprise
 - Carrier services purchase decisions based on payback period
 - Paybacks < 1 yr => Continued demand
 - 1% increase in IT = 1.5-2% decrease in G&A
 - IT spending increased from 0.5% to 3.5% of sales in 90's
- The Service Provider
 - Enterprise demand => need for equipment purchases
 - Consumption of bandwidth + shifting computing paradigm makes for new revenue opportunities
 - Systems for old revenue don't support new revenue & cost points => new equipment purchases

Partial View: New Areas for Investment

- Materials
 - But only with an economic advantage in an application that matters
 - Beware the Nano bubble!
 - Probably more companies named “Nano_____” in 2002 than named “_____Light” in 2000
- Information Tech: removing the COW
- Personalized Medicine
-???

The HALF-EMPTY view

- Technology led slowdown
- Consumer Reaction pile-on
- Sept 11
- The WAR
- 2002 is history!
- Financings Unavailable
- Stay afloat, tread water, hunker down

The HALF-FULL view

- Less competition
- Time to develop technology
- Focus: sustainable advantage, value-add
- Better critique, Better ventures, Higher Bar
- Longer Term View/Horizon
- Lower Funding => Lower Risk

RECOIL: The New World

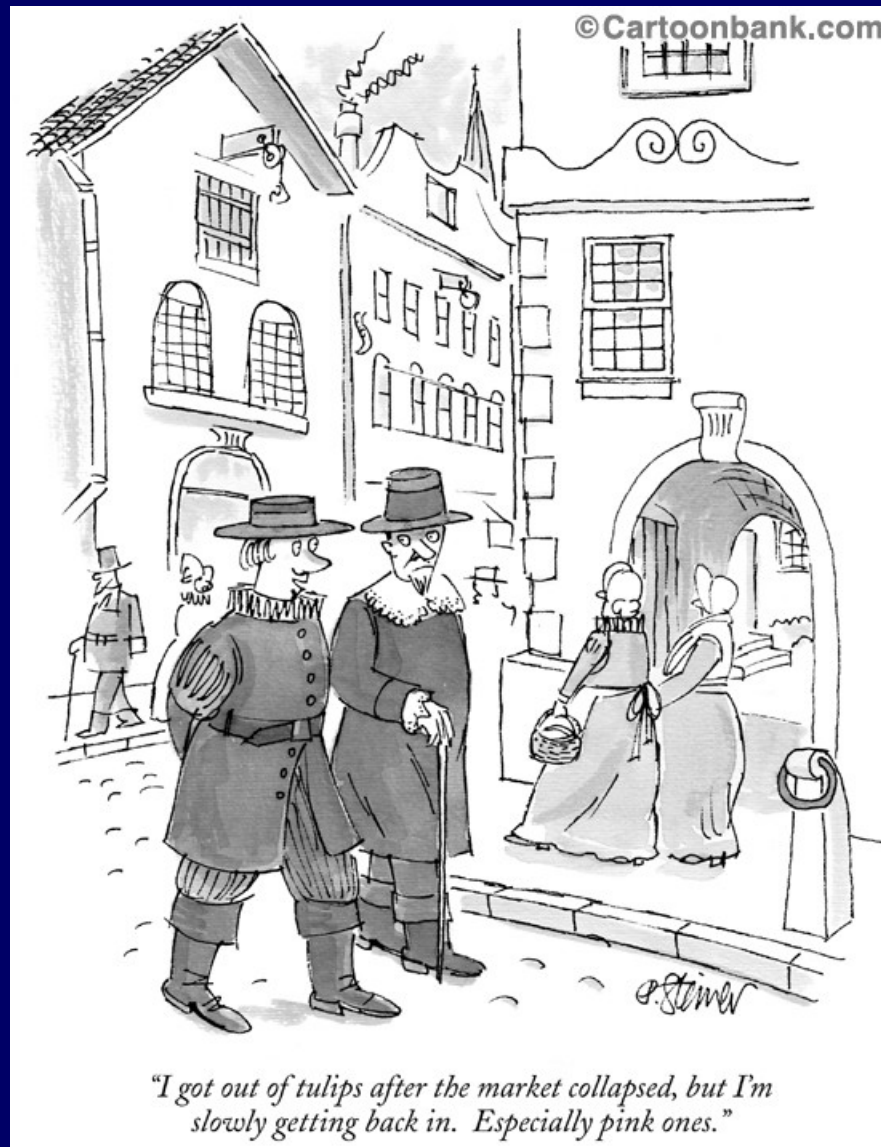
- Reaction to the excesses
- Unskilled, Unthinking “eBusiness” investment
- Skepticism & Negativism: Prolonged Cycle
- VC Euphoria NOT
- Hard ROI – retrospective vs. prospective savings
- Lack of Human Capital

The Weather Forecast ...

- Rate of change will accelerate - life will be more complex, busier . . .
- Adaptability, agility & momentum will be the key to success!
- Innovation, opportunities & entrepreneurship will thrive
- Disruption will be the order of the day
- Fun, fortunes & failure will be in abundance

Wake Up Call

- What we take for Granted
- Irrelevance & the “other “ things
 - Relationships: Friends & Family
 - Satisfaction, Enjoyment & Contentment
 - Feeling valuable: making a difference
- Value System
- Books: Don't Sweat The Small Stuff



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Tomorrow's Markets...

Network Issues & Trends

- **Everything over IP**
- **Two layer network**
- **Value added services**
- **Internet based SW architecture**
- **Skills shortage**
- **Mission critical technology**
- **Rapid, unpredictable growth**
- **Legacy encapsulation**

Internet
Access

(IP/Buss Class IP)

Private
Data

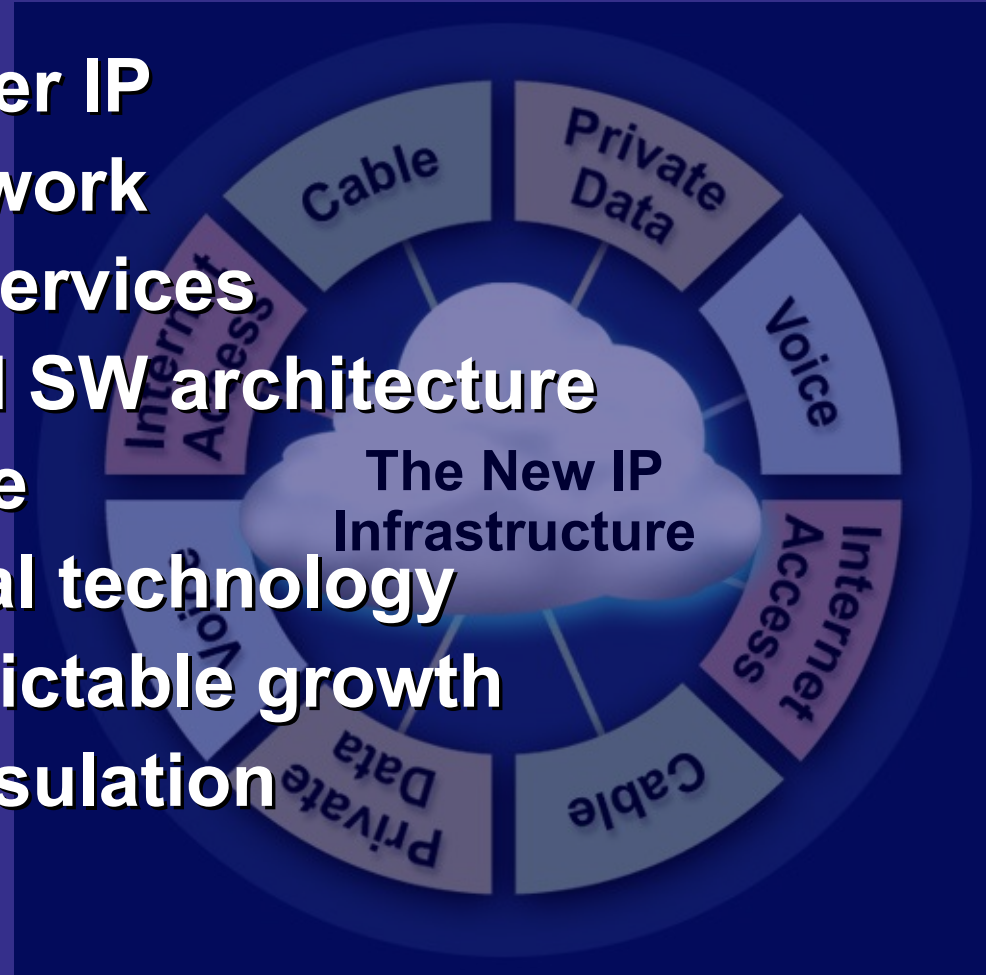
(ATM/FR)

Voice

(VCIP)

Cable

(Broadcast)



IT Issues & Trends

- Skills shortage
- Legacy architectures & “islands” vs dynamic architecture needs
- Mission Critical Technology
- Changing applications mix
- Systematic productivity : The Real-Time Enterprise
- Random acts of productivity: everyday processes
- Technology based competition
- Operations Cost

Results: Market Opportunities

- Outsourcing & growth => a new (datacenter) infrastructure
- Value-added Services => new programmable network
- Operations cost & Complexity => OMAP focus
- A new IT architecture => “Real Time” information base
- Skills shortage & complexity => ASP, services
- Dynamic demand => Compute utilities
- IT going from 0.5% to 3.5% to ?% of sales

“Real Time” Enterprise

“Ciscoize” and “Dellize” Every Business

- Adaptive architecture, evolvable applications
- Configuration NOT customization
- Federation NOT integration
- Architecture to connect architectures
- Rapid , incremental implementation
- Beyond “database” to an “information base”
- Instantaneous “financials”, metrics, supply chain, customer support

“Spontaneous transaction flow and information transparency throughout the extended enterprise”

Operations Systems

- Cost of Operations:
start/add/change/delete/operate/update
- Fluid Resource allocation
- Fluid “service” provisioning
- Hard ROI: Cost savings & Revenue Generation
- Total Cost of Ownership

One Analyst's Explanation:

<u>Time</u>	<u>Platform(s)</u>	<u>Network Operations Model</u>	
1960-1980	Mainframe/ IBM era	10:1 people/machine ratio	<i>Old network management systems were single vendor solutions optimized for cost in rigid five-year preplanned networks.</i>
1970-1990	Minicomputer/ DEC era	1:1 people/machine ratio	
1980-	Workstation/ PC era	1:10 people/machine ratio	
1990-	Enterprise networks/ Cisco era	1:100? people/machine ratio	<i>New network operations systems must be designed for <u>adaptability</u> and <u>change</u> (new equipment, multiple vendors, new service offerings/provisioning).</i>
2000-	Broadband packet networks ?	1:1000? people/machine ratio	

New Area: “Virtual Computer”

A Computer Distributed Over the Internet

- Networks of computers as the “Virtual Computer”
- Scalability of hardware - add & delete
- Self management
- Geographic distribution
- Load balancing, caching, COS, ... services
- Resilience
- “Network operating system”
 - SETI, Napster, Routers

Case Study: Router Networks

- Behave as “one” machine
- System self-adjusts to “node” failures
- Capacity can be added/deleted - “self organizing”
- Geographically disbursed
- Managed failure modes

New Areas: Network Services

The “Decomposed” Computer Architecture

- Storage services
- Database services
- Web servers/HTTP servers
- TCP/IP session servers
- Application servers
- Composite services
 - Replication
 - Load balancing
 - Distribution

Other...

- Remote Services – multi-trillion global market
- Collaboration –Zaplet
- Nano

Investment Conclusions

- Internet is changing the model of computing
- Software architecture of the internet will become the software architecture for the enterprise
- Computing infrastructure (datacenter) will be the next surprise; fueled by “ASP Services”, outsourced “compute tone”, and internet “geoscale”
- The “real-time enterprise” will drive carrier demand at increasing rates of growth & create Oracle/SAP scale companies
- Operations systems to reduce operating cost & total cost of ownership will be a major issue/opportunity
- Evernet – everyplace, every time, every device thru “mobile IP” (but not a lot of money for new ventures)

Fundamental Contributors: Investment Areas

- Semiconductors
- Software in hot boxes
- Physics / Optical /Nanotechnology
- ASP
- Nexgen telecom services
- Networks: the programmable network
- Real Time Enterprise
- Infrastructure – revamping datacenter architectures
- Operations Systems

But....

- Nano is approaching bubble status
- Storage has it's "lightlay's"

